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LIGHT-HOUSE AND PIGEON-HOUSE, SOUTH WALL, DUBLIN.

The Light-House stands rather a little to the south side of the bay of Dublin. It is an elegant piece of architecture, three stories high, surmounted by an octagonal lantern, which is lighted by oil-lamps, aided by reflecting lenses. It was erected by Mr. Smith, in 1782, and affords a striking proof that the greatest difficulties may be overcome by genius and perseverance. A stone stair-case, with an iron balustrade, winds round the outside of this extraordinary building, terminating in an iron gallery, which surrounds it at the upper story. This useful and ornamental structure stands at the extremity of a range of building, called the South-wall—which was erected for the purpose of securing the harbour against the sands of the South-bull. The building of this wall was commenced in 1748, and is constructed of large blocks of granite, strongly cemented, and fastened together with iron cramps. It runs in a straight line into the sea the astonishing length of 17,704 feet, or nearly three English miles and a half.

About midway on this wall, a fort or battery has been constructed, called the Pigeon House. The pier at this point is two hundred and fifty feet wide and on it are built a Magazine, Arsenal, and Custom-house. It is considered a place of great strength, being surrounded with heavy cannon, and commanding the bay in various directions. There is always a large detachment of artillery stationed here, for whose accommodation a barrack has been erected. At this place there is also a basin, for packets and other vessels of a similar description, nine hundred feet in length, and four hundred and fifty in breadth; but since the formation of the harbours of Howth and Kingstown it is but little frequented.

CAPE CLEAR LIGHT-HOUSE.

Sir—As some of your inland readers scarcely know what species of structure a light-house is, I send you the following account of the one erected at this station, upon the accuracy of which they may rely.

It may be well here to mention, that round the coast of Ireland there are no less than thirty-six light houses. Some are harbour lights, others floating; some revolve at different periods, others stationary; and some are furnished with stained glass, which varies the colour of the light.

Many have been the contrivances in former days to warn ships of danger or direct them in their course, by means of fires, &c.; but in modern days to adopt proper methods of constructing houses, in which the lights might be so varied as to assure the mariner of the safety of his course, and prevent the recurrence of shipwrecks. It may be interesting to some also to state that all foreign vessels are obliged to pay the sum of one halfpenny per ton for every light-house or floating light which they may have passed, or be about to pass, along the coast. British and Irish vessels, on a foreign voyage, and foreign privileged vessels, one farthing per ton for every light-house or floating-light which they may have passed, or be about to pass. Coasters, one farthing per ton for every light-house or floating-light, which they may have passed. If in ballast, one-eighth of a penny per ton only.

In reference to Cape Clear I may observe that it is an island, three miles long and one and a half wide, containing nine hundred and sixty-nine inhabitants. On the south side of this island is the light-house, a very fine building, erected about the year 1817, by the Ballast Board of Dublin. It is a circular tower of cut granite—the workmanship of which is remarkably well executed. It is about thirty-six feet high from the base to the balcony, which surrounds the lantern, and from high watermark four hundred and forty-eight feet. On the inside are three flights of winding stone steps. The floors are very curiously constructed, being formed of large stones—the centre one, which is circular, supported by those adjacent, into which it is grooved, and lead in the interstices. In the upper part, or lantern, are sixty four panes of the best plate glass, of near a quarter of an inch in thickness; the frame, in which the glass is placed, is metal, with copper screwed over. The cupola, or roof, is of copper, painted white, and ornamented with a weather-cock.

The light is produced by twenty-one lamps, which are placed in the foci of large reflectors of the parabolic form: they are of copper, with silver fronts; the whole of which are supported by a branch which revolves by machinery, much resembling that in a clock, but on a large scale, enclosed in a brass-pannelled case, and put in motion by a metal of three hundred weight. The light appears once in every two minutes, and is seen at the distance of six or seven leagues—in its brightest state, like a star of the first magnitude, and gradually becoming less luminous, is eclipsed, there being three sides, with seven lamps on each, and three angles; the sides shew brightest, and the angles dark. There is consumed each day, on an average, seven hundred and fifty gallons of spermaceti oil. It is lit at sun-set, and extinguished at sun-rise. It bears to Misen-head N. W. $\frac{1}{2}$ W. nine and a half miles.

Annexed to the light-house, by a corridor or hall, is a square tower, which was formerly occupied by a naval lieutenant and midshipman, with a party of soldiers, and used in making telegraphic signals. The assistant light-keeper resides in it at present, and the principal, in a dwelling-house, built by the Ballast-board, convenient to the tower. There are out-houses and yards, &c., and the whole enclosed by a wall, with a gate opening to the road, which leads to South Harbour, a small cove at the S. W. part of the island. R. WILSON, jun.

Dec. 1834.

The following additional particulars relative to the Island of Cape Clear have also been sent to us by Mr. W.:

On the north-west point stand the ruins of a castle, built on a wild point of a cliff in the sea, called *Dunamore*, i. e. the Golden Fort. There is a very narrow and dangerous passage, about a yard broad and ten yards in length, to this castle. It and the island formerly belonged to O'Driscoll, and were taken on the 22d of March, 1601, by Captain Harvey, who soon after obliged Sir Fineen O'Driscoll to submit to Queen Elizabeth.* Some time ago, a priest and another person went to see this castle: the latter stirring one of the lower stones, they had scarcely left it two minutes when the whole top part fell down; the stones were fast together after falling, and remain there still in masses.

There are four fresh water loughs—three towards the west of the island, two of which are full of reeds, which are used by some of the Capers to thatch their houses; the other, they say, is enchanted, and that if an oily barrel, a dirty jar, a rusty key, or any thing else be put into it, it would become as clean as ever.

On the south side of the island there is a cove, called South Harbour, where a vessel may anchor in safety when the wind is not south. On the opposite side there is another, called North Harbour, where there is a pier and basin for the safety of the fishing boats, the largest of which contain from ten to twelve tons. At this harbour (which is called in Irish *Tra Kieran*, i. e. Saint Kieran's strand) stand the ruins of a church, dedicated to St. Kieran, and near it is the burying ground; there is also a pillar of stone, with a cross rudely cut—of this stone it is said, that the saint was the workman. Here the people collect on St. Kieran's day, to do penance; there is a *holy well* near it. This St. Kieran was the first bishop of Saiger. Archbishop Usher says, he was born in this island.†

Towards the middle of the island is the chapel, a long narrow thatched building, and as destitute of any ornament as a barn. The priest lives in the island during the winter months, and in the summer stops at Sherkip, an island which lies between the cape and the main land.

The houses are built of stone, with mud for mortar, and are mostly thatched with straw, which is artfully kept down by nets covering the whole roof; these nets are made of ropes of straw, the meshes not quite a foot square; to the ends of these stones are tied, which hang down round the eaves. There is no turf on the island, but there is a kind of mud at the west lakes, which a few of the inhabitants work together with their hands and dry: turf is brought from the mainland, and sold on Sundays and holidays.

The inhabitants are very poor, and generally a simple

* From Smith's History of Cork.

† Idem.

honest people; most of them are strong and healthy, being seldom invaded with disorders, and die generally of old age, chiefly owing to their temperate living, hard labour, and clearness of the air. They are kind to each other, and courteous to strangers; they are excellent pilots for that part of the coast.

Cape is famous for its springs of fresh water, which are reckoned to be superior to any in Ireland: it was brought to Dublin, and tried by Andrew Blake Kirwan.

The ground is chiefly manured with sea-weed, which is cut from off the rocks, by means of an implement resembling a scythe, composed of a long pole with a hook affixed. The women take as active a part in the cultivation of the ground as the men; their food chiefly consists of potatoes and fish, which are boiled together in one pot; they like onions, leeks, and garlick, which are eaten raw. Both men and women are very fond of tobacco; they delight in dancing, and have the bagpipes played in a field on summer Sunday evenings. They marry at a certain season, which is after Christmas. On the whole island there are but two trees, which are situated in the pond at South Harbour.

The game on the Cape are—wild duck at the lakes—green and grey plover, very few partridge, snipe, pigeons, and a great number of sea birds in the cliffs—also rabbits.

There are a number of cows, and but half a dozen horses; the sheep are very small, being fed on the most barren part of the island—they are kept for the sake of the fleece, of which they make frieze for clothing. There is a school on this island for poor children, situated near the chapel.

BELL-ROCK LIGHT-HOUSE.

The Bell-rock, or Cape, is a dangerous ridge of sunken rocks, lying about twelve miles east from the point of Fife Ness, and an equal distance south from Arbroath harbour, between the openings of the Firths of Tay and Forth. The ridge extends about a mile in length, and half a mile in breadth; the top of the rock only being seen a few hours at low water in spring tides. This rock not only renders the navigation of the Tay and Forth very hazardous, but is also highly dangerous to all vessels navigating coast-wise. Every year, formerly, vessels of great value were wrecked upon it, and there is reason to suspect that many which were supposed to have foundered at sea, have suffered on this dangerous reef. It is a remarkable fact that hardly a single instance has been known of a vessel being saved which had the misfortune to strike upon this rock. Captain Brodie of the royal navy placed a beacon on it some years ago, but though the greatest care was taken to have it properly secured, the first storm broke the chains, and the beacon was driven ashore. Previous to the erection of the noble light-house now placed there, it was commonly remarked that, even if it were practicable to erect it upon such a sunken rock, no one would be found hardy enough to live in an abode so dread and dreary, and that it would fall to the lot of the projectors themselves to possess it for the first winter. The bill appointing commissioners for this great undertaking, however, passed both houses of parliament late in the session of 1806. In the following summer a vessel was fitted out as a floating-light, and moored off the Bell-rock. Mr. Stevenson, engineer for the commissioners of the northern light-houses, modelled the first design, which was submitted to the opinion and advice of Mr. Rennie, and subsequently adopted.

The Bell-rock Light-house is a circular building, the foundation stone of which is nearly on a level with the surface of the sea at low water of ordinary spring tides; and consequently at high-water of these tides, the building is immersed to the height of about fifteen feet. The two first or lower courses of the masonry are imbedded into the rock, and the stones of all the courses are dovetailed and joined with each other, forming one connected mass from centre to circumference. The successive courses of the work are also connected by joggles of stone; and to prevent the stones from being lifted up by the force of the sea, while the work was in progress, each stone of the solid part of the building had two holes

bored through it, entering six inches into the course immediately below, into which oaken tree nails, two inches in diameter, were driven, after Mr. Smeaton's plan at the Eddystone. The cement used at the Bell-rock, like that of the Eddystone, was a mixture of pozzolano, earth, lime, and sand, in equal parts, by measure. The building is of a circular form, composed of stones of the weight of from two tons to half a ton each. The ground course measures forty-two feet in diameter, and the building diminishes, as it rises to the top, where the parapet wall of the light-room measures only thirteen feet in diameter. The height of the masonry is one hundred feet, but including the light-room, the total height is one hundred and fifteen feet. The building is solid from the ground course to the height of thirty feet, where the entry-door is situate, to which the ascent is by a kind of rope ladder with wooden steps, hung out at ebb-tide, and taken into the building again when the water covers the rock; but strangers to this sort of climbing are taken up in a chair, by a movable crane projected from the door, from which a narrow passage leads to a stone stair-case thirteen feet in height. Here the walls are seven feet in thickness, but they generally diminish from the top of the stair case to the parapet-wall of the light-room, where they measure one foot in thickness. The upper half of the building may be described as divided into six apartments for the use of the light-keepers, and for containing light-house stores. The lower or first, formed by an inside scarfement of the walls at the top of the stair-case is chiefly occupied with water tanks, fuel, and the other bulky articles; the second floor is for the oil, cisterns, glass, and other light-room stores; the third is occupied as a kitchen; the fourth is the bed-room; the fifth, the library, or strangers' room, and the upper apartment forms the light-room. The floors of the apartments are of stone, and the communication is made by means of wooden ladders, excepting in the light-room, where every article being fire-proof, the steps are made of iron. There are two windows in each of the three lower apartments, but the upper have each four windows. The casements are all double, and are glazed with plate-glass, having besides an outer storm-shutter, or dead light of timber, to defend the glass from the waves and spray. The parapet wall of the light-room is six feet in height, and has a door which leads out to the balcony or walk formed by the cornice round the upper part of the building; which is surrounded by a cast iron rail, wrought like net-work. This rail rests upon batts of brass, and has a massive coping, or top rail, of the same metal. In the kitchen, there is a grate or open fire-place of cast iron, with a smoke tube of the same metal, which passes through the several apartments of the light-room, and heats them in its passage upwards. This grate and chimney merely touch the building, without being included or built into the walls, which, by this means, are neither weakened, nor liable to be injured by it.

It is of an octagonal figure, twelve feet across, and fifteen in height, formed with cast iron sashes, glazed with large plates of polished glass, measuring about two feet six inches by two feet three inches, each plate being a quarter of an inch thick. The light-room is covered with a dome roof of copper, terminating in a large gilded ball, with a vent-hole in the top. The light of the Bell-rock is very powerful, and is readily seen at the distance of six or seven leagues, when the atmosphere is clear. The light is from oil, with Argand burners placed in the focus of silver plated reflectors, measuring twenty-four inches over the lips; the silvered surface or face being hollowed or wrought to the parabolic curve. That the Bell-rock light may be easily distinguished from all other lights upon the coast, the reflectors are ranged upon a frame with four faces or sides, which, by a train of machinery, is made to revolve upon a perpendicular axis once in six minutes. Between the observer and the reflectors, on two opposite sides of the revolving frame, shades of red glass are interposed, in such a manner, that during each entire revolution of the reflectors, two appearances, distinctly differing from each other, are produced; one is the common bright light familiar to every one, but, on the other, or shaded sides, the rays are tinged of a red colour. These red and bright lights, in the course of each revolution, alternate